CLAIMS

1. A method re-establishing communication for a wireless communication device in a wireless communication network after a communication loss therebetween, the method comprising the acts of:

receiving an indication of the communication loss between the wireless device and the wireless network;

based on receiving the indication of the communication loss, adding an identifier of the wireless device to a list of unavailable wireless devices in the wireless network; and

causing identifiers of the list to be broadcasted in the wireless network.

2. The method of claim 1, further comprising the acts of:

receiving an indication that communication is re-established between the wireless device and the wireless network; and

based on receiving the indication that communication is re-established, removing the identifier of the wireless device from the list.

3. The method of claim 1, wherein the act of causing the identifiers of the list to be broadcasted comprises the further act of causing the identifiers of the list to be broadcasted on a regular basis.

4. The method of claim 1, wherein the act of causing the identifiers of the list to be broadcasted comprises the further act of causing the identifiers of the list to be broadcasted over a control channel of the wireless network.

5. The method of claim 1, comprising further the act of:

removing the identifier of the wireless device from the list after an expiration of a period of time.

6. The method of claim 1, comprising further the acts of:

in the wireless communication device:

after the communication loss, receiving signals from the wireless network;

decoding broadcasted identifiers of the list from the wireless network;

comparing each broadcasted identifier with an identifier of the wireless device;

based on a match between a broadcasted identifier and the identifier of the wireless device, transmitting a control message which informs the wireless network of the presence of the wireless device.

7. The method of claim 1, wherein the wireless network comprises a cellular telecommunications network.

8. In a wireless communication device, a method of re-establishing communication with a wireless communication network after a communication loss therewith, the method comprising the acts of:

after the communication loss, decoding broadcasted identifiers of a list of unavailable wireless communication devices in the wireless network;

comparing each broadcasted identifier with an identifier of the wireless device; and

based on a match between a broadcasted identifier and the identifier of the wireless device, transmitting a control message which informs the wireless network of the presence of the wireless device.

9. The method of claim 8, comprising the further act of:

otherwise, normally refraining from transmitting the control message to the wireless network.

10. The method of claim 8, wherein the act of decoding broadcasted identifiers comprises the further act of decoding the broadcasted identifiers over a control channel of the wireless network.

11. The method of claim 8, wherein the broadcasted identifiers comprise one of identification numbers and an IP addresses.

12. The method of claim 8, wherein the wireless device comprises a cellular mobile station.

13. A wireless communication device, comprising:

a receiver;

a transmitter;

an antenna coupled to the receiver and the transmitter;

one or more processors coupled to the receiver and the transmitter;

the one or more processors being operative to:

decode broadcasted identifiers of unavailable wireless communication devices in a wireless communication network;

compare each broadcasted identifier with an identifier of the wireless device; and

cause a control message which informs the wireless network of the presence of the wireless device to be transmitted through the transmitter, based on a match between a broadcasted identifier and the identifier of the wireless device.

14. The wireless communication device of claim 13, wherein one or more processors are further operative to otherwise normally refrain from transmitting any control message to the wireless network.

15. The wireless communication device of claim 13, further comprising a cellular mobile station.

16. The wireless communication device of claim 13, wherein one or more processors are further operative to decode broadcasted identifiers over a control channel of the wireless network.

17. The wireless communication device of claim 13, wherein the broadcasted identifiers comprise one of identification numbers and an IP addresses.

18. In a wireless communication device, a method of re-establishing communication with a wireless communication network after a loss of communication therewith, the method comprising the acts of:

monitoring a control channel of the wireless network;

decoding broadcasted identifiers of unavailable wireless communication devices in the wireless network;

comparing each broadcasted identifier with an identifier of the wireless device; and

based on a match between a broadcasted identifier and the identifier of the wireless device, transmitting a control message which informs the wireless network of the presence of the wireless device; and

otherwise, normally refraining from transmitting the control message to the wireless network.

19. A cellular telecommunications system comprising:

a cellular network infrastructure which:

receives indications of communication losses with one or more cellular mobile stations;

adds identifiers of the one or more cellular mobile stations associated with communication losses to a list;

causes the identifiers in list to be broadcasted through the cellular network infrastructure on a regular basis;

each of the one or more cellular mobile stations operative to:

decode the broadcasted identifiers;

compare each broadcasted identifier with an identifier of the cellular mobile station; and

cause a control message which informs the cellular network infrastructure of the presence of the cellular mobile station to be transmitted based on a match between a broadcasted identifier and the identifier of the cellular mobile station.

20. The cellular telecommunications network of claim 19, wherein each cellular mobile station is further operative to normally refrain from transmitting any

control message to the cellular network infrastructure, unless a match exists between a broadcasted identifier and the identifier of the cellular mobile station.

21. A method re-establishing a connection between an application server and a wireless communication device operating in a wireless communication network, the method comprising the acts of:

storing an identifier of the application server in association with an identifier of the wireless device;

receiving an indication of a communication loss between the wireless device and the wireless network;

receiving an indication that communication is re-established between the wireless device and the wireless network; and

providing the stored association of identifiers of the application server and the wireless device to assist in re-establishing a connection between the wireless device and the application server.

22. The method of claim 21, wherein the act of storing the identifier is performed after the act of receiving the indication of the communication loss.

23. The method of claim 21, wherein the act of storing the identifier is performed prior to the act of receiving the indication of the communication loss.

24. The method of claim 21, wherein the act of storing the identifier of the application server comprises the further act of storing an application server name of the application server.

25. The method of claim 21, comprising the further act of:

using the identifier of the application server, contacting the application server to assist in re-establishing the connection.

26. A method of re-establishing data communication between an application server and a wireless communication device from a communication loss between the wireless device and a wireless communication network, the method comprising the acts of:

storing identifiers of application servers in association with identifiers of wireless communication devices between which data communications were established or pending; and

after communication is re-established between a wireless communication device and a wireless communication network:

assisting in re-establishing a connection between an application server and the wireless device with use of a stored association between an identifier of the application server and an identifier of the wireless device.

27. The method of claim 26, comprising the further act of:

using the identifier of the application server to contact the application server to assist in re-establishing the connection.

28. The method of claim 26, wherein the identifier of the application server comprises an application server name.

29. A server, comprising:

a data storage medium;

computer instructions stored on the data storage medium;

a computer processor which executes the computer instructions for:

storing identifiers of application servers in association with identifiers of wireless communication devices between which data communications were established or pending; and

providing an identifier of an application server to assist in re-establishing a connection between the application server and a wireless communication device after communication is re-established between the wireless device and a wireless communication network.

30. The server of claim 29, wherein the computer processor which executes the computer instructions for providing the identifier is used for contacting the application server to re-establish the connection between the application server and the wireless device.

31. The server of claim 29, wherein the computer processor which executes the computer instructions is also used for contacting the application server with use of the identifier to further assist in re-establishing data communication between the application server and the wireless device.

32. A method to facilitate a re-establishing of communication between a wireless communication device and an application server, the method comprising the acts of:

receiving a plurality of connection requests from the application server to the wireless device after a communication loss between the wireless device and a wireless communication network; and

limiting a number or a rate of the connection requests from the application server during the communication loss between the wireless device and the wireless network.

33. The method of claim 32, wherein the act of limiting the number or the rate of the connection requests comprises the further act of performing a rate limiting process with the connection requests from the application server.

34. The method of claim 32, wherein the act of limiting the number or the rate of the connection requests comprises the further act of performing a traffic policing process with the connection requests from the application server.

35. The method of claim 32, wherein the application server has user information which is pushed to the wireless device.

36. The method of claim 32, wherein the application server has an e-mail application for use with the wireless device.

37. The method of claim 32, wherein the wireless device comprises a cellular mobile station.

38. The method of claim 32, wherein the number or the rate is determined based on an Access Point Name (APN) for the wireless device.

39. A server for facilitating a re-establishment of data communications between an application server and a wireless communication device, the server comprising:

a data storage medium;

computer instructions stored on the data storage medium;

a computer processor which executes the computer instructions for:

receiving a plurality of connection requests from the application server after a communication loss between the wireless device and a wireless communication network; and

limiting a number or a rate of the connection requests from the application server during communication loss between the wireless device and the wireless network.

40. The server of claim 39, wherein the computer processor which executes the computer instructions for limiting the number or the rate of the connection requests performs a rate limiting technique.

41. The server of claim 39, wherein the computer processor which executes the computer instructions for limiting the number or the rate of the connection requests performs a traffic policing technique.

42. The server of claim 39, wherein the server comprises an Access Point Name (APN) server.

43. In a cellular mobile station, a method of re-establishing communication comprising acts of:

operating in a cellular telecommunications network;

detecting that a signal strength of signals from the cellular telecommunications network is below a predetermined threshold;

based on detecting that the signal strength of the signals is below the predetermined threshold, scanning for signals from one or more additional cellular telecommunications networks; and

while signals from one or more additional cellular telecommunications networks are inadequate for communication, transmitting on a regular basis a control message which informs the cellular telecommunications network of the presence of the cellular mobile station.

44. The method of claim 43, comprising the further acts of:

detecting that the signal strength of the signals is above the predetermined threshold; and

based on detecting that the signal strength is above the predetermined threshold, transmitting the control message to the cellular telecommunications network.

45. The method of claim 43, further comprising:

wherein the act of operating in the cellular telecommunications network comprises the further act of receiving e-mail information pushed from the cellular telecommunications network.

46. A cellular mobile station, comprising:

a receiver;

a transmitter;

an antenna coupled to the receiver and the transmitter;

one or more processors coupled to the receiver and the transmitter;

the one or more processors being operative to detect that a signal strength of signals from a cellular telecommunications network is below a predetermined threshold;

the one or more processors being further operative to, based on detecting that the signal strength is below the predetermined threshold, scan for signals from one or more additional cellular telecommunications networks; and

the one or more processors being further operative to, while signals from one or more additional cellular telecommunications networks are inadequate for communication, cause a control message which informs the cellular telecommunications network of the presence of the cellular mobile station to be transmitted through the transmitter on a regular basis.

47. In a wireless communication device, a method of operating to re-establish communication between the wireless device and a wireless communication network comprising the acts of:

receiving radio frequency (RF) signals from a wireless communication network during communication therewith;

detecting that a signal strength of the RF signals is no longer adequate for communication;

scanning to identify a new RF signal for communication;

if a new RF signal is not identified by the act of scanning, periodically scanning to identify a new RF signal for communication; and

if a new RF signal is identified, transmitting a control message to re-establish communication.

48. The method of claim 47, wherein the act of detecting comprises identifying that a received signal strength indicator (RSSI) is below a predetermined threshold.

49. The method of claim 47, comprising the further act of:

normally refraining from transmitting the control message until a new RF signal is identified.

50. The method of claim 47, comprising the further act of:

entering into a sleep mode between periods of the periodic scanning.

51. The method of claim 47, wherein the control message comprises an update message.

52. A wireless communication device, comprising:

a receiver which receives radio frequency (RF) signals from a wireless communication network during wireless communication therewith;

a signal strength detector which detects a signal strength of the RF signals;

a transmitter;

one or more processors coupled to the receiver and the transmitter;

the one or more processor being operative to:

determine that the RF signals are no longer adequate for communication based on the signal strength detector;

cause the wireless device to enter into a first mode of scanning to identify a new RF signal for communication;

cause the wireless device to enter into a second mode of periodic scanning to identify a new RF signal for communication, if a new RF signal is not identified in the first mode of scanning; and

cause the transmitter to transmit a control message to re-establish communications if a new RF signal is identified.

53. The wireless communication device of claim 52, wherein the one or more processors normally refrain from causing the transmitter to transmit the control message until a new RF signal is identified.

54. The wireless communication device of claim 52, wherein the one or more processors cause the wireless device to enter into a sleep mode of operation between periods of the periodic scanning in the second mode of periodic scanning.